

REMARKS

Claim 8 stands rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The applicants would however like to point out that the basis for the claimed ratio of sulfonyl iodide to the radical precursor is to be found on page 8, lines 2-4. Accordingly, it is respectfully requested that this rejection be withdrawn.

Claim 17 stands rejected under 35 USC 112, second paragraph, as being indefinite. This claim has duly been deleted from the application, rendering this rejection moot.

In the Office Action, Claims 1, 4-7, and 15-17 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. 4,055,713 (Moczygemba et al.) in view of Lissi et al.

The Applicant would first like to repeat his objection to the use of the Lissi et al. reference in the formulation of inventiveness arguments against the claims. It is accepted that Lissi et al. clarifies the broad mechanistic role of iodine in the polymerisation of vinylic monomers. However, as these authors do not present technical conclusions beyond this, the document represents only theoretical background knowledge to the present invention.

With respect to the Moczygemba reference, the Examiner has correctly identified that this document fails to disclose the use of ethylenically unsaturated monomers comprising at least 50 mole% methacrylate monomers. However, it cannot be conceded that a skilled man would be lead to successfully experiment with such monomers following his reading of this document and thereby derive a process according to claim 1. Mocyzemba et al. was published in 1977 and has not been used as a basis for developing the use methylacrylate monomers from that time. Firstly this suggests that the process it discloses is not particularly adaptable. Equally, it highlights the prevailing view in the art – as exemplified by US Patent No. 5,439,980 and Macromolecules, 28,

8051 (1995) – that, at the priority date of the present application, the use of degenerative iodine transfer (DIT) for monomeric mixtures comprising substantial molar proportions of methacrylate was not considered technically feasible.

The applicants respectfully suggest that claim 1 is patentable over Mocyzemba et al. in view of Lissi et al., and accordingly requests that the corresponding objections to claim 1 - and claims dependent thereon - be withdrawn.

In the Office Action, Claims 1 and 4-17 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. US 6,132,918 (Enright et al.). Applicants respectfully contend that the technical disclosure of Enright et al. has not been considered in its entirety as required by established jurisprudence. The Examiner has arbitrarily isolated parts of this document from their context and thereby derived a technical teaching that is distinct from the integral teaching of the document.

Enright et al. is directed to the production of toner and developer compositions that comprise carrier particles coated with specific polymers. Polymethyl methacrylate (PMMA) is described as a preferred polymer on the basis that, after coating the carrier particles, substances such carbon black can be dispersed within it in the requisite amounts to yield effective toner particles having a narrowly defined range of conductivity.

Although this document does disclose methods for producing PMMA, the preferred reactants and reaction steps of such methods are specifically chosen to result in polymers that allow particular electrostatic and physical properties to be imparted to the toner particles (column 5, line 48 to column 6, line 17). Specifically, the methods seek to control the molecular weight of the PMMA produced as this determines the temperature at which the polymer can be thermally deformed or fused with other polymeric materials in the carrier coating process. No

reference is made to controlling the polydispersity of the derived PMMA in this art, nor to the importance of retaining a cross-linkable functionality on these polymer chains.

On the basis of the above arguments, the applicants respectfully suggest that claim 1 is patentable over Enright et al. and accordingly requests that the corresponding objections to claim 1 - and claims dependent thereon - be withdrawn.

In the Office Action, Claims 1-3 and 17 stand rejected under 35 U.S.C. § 103 as allegedly being unpatentable over U.S. Patent No. US 5,439,980 (Yutani et al.) Applicants note that this document was, of course, cited as background art in the description as filed. Applicants respectfully contend that this document teaches away from the present invention for the following reasons.

The Examiner has cited Example 3 of Yutani as describing a process in which an “intermediate polymer” of methyl methacrylate (MMA) is derived. There is, however, no data to suggest the formation of such a polymer. The polymerisation step in this example is not effected until the reaction vessel has been “pressurized with the ethylene gas..at 70°C” (column 9, line 47); the added ethylene acts as a monomer (M2) and, in the presence of a polymeric iodide compound, results in the successful production of a MMA-ethylene random copolymer covalently bonded to the polymeric backbone of said iodide compound. Polymerisation is enabled as the specific molar ratio of methyl methacrylate to ethylene does not exceed 1:1.

By contrast, comparative examples 1 and 2 of Yutani et al. define experiments in which methyl methacrylate is the only monomer present. The results described in column 7, line 65f and column 9, line 16f indicate that in such circumstances, only a homopolymer of methylacrylate is produced and not a block polymer with the polymeric backbone of the iodide compound. Yutani

et al. therefore fails to show degenerative iodine transfer under conditions of high methylmethacrylate molar ratios.

While the Examiner has correctly identified that Yutani et al. discloses the potential to use iodide compounds that contain other functional groups in the radical polymerisation of *inter alia* methyl acrylate monomers, Yutani qualifies that the substitution of such functional groups must still yield a compound that is not cleaved at any bond other than the iodide. The most preferred (supplemental) functional groups to this end are fluoride and chloride (column 3, line 24f) suggesting that the presence of more electronegative halides stabilizes the iodide compound during the polymerisation process. This is confirmed in the patentee's later listing of preferred polymeric iodide compounds (column 3, line 44) which are typically highly substituted with fluoride and chloride functional groups.

It is the applicants understanding that the substitution of non-halide functional groups into the iodide compounds only occurs in addition to the other halides (column 3, line 28); this interpretation is strengthened by reference again to the preferred polymeric iodide compounds which do not comprise sulfonyl- and oxy- groups unless a plurality of halide substituents are present. Given this, it is unlikely that a skilled artisan, aware of the teaching of Yutani, would select the $\text{-SO}_3\text{H}$ group alone as the basis for developing a low molecular weight iodide compound for use in radical polymerisation.

The applicants respectfully suggest that claim 1 is patentable over Yutani et al. and accordingly requests that the corresponding objections to claim 1 - and claims dependent thereon - be withdrawn.

While no fees are believed due at this time, Applicants' representative authorizes the Commissioner to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 01-2508, referencing Order No. 00307.0053.NPUS00.

Should the Examiner find any impediment to the prompt allowance of the claims that could be corrected by a telephone interview with the undersigned, the Examiner is requested to initiate such an interview.

Respectfully submitted,



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